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Auxin Effects on Rooting of Stem Cuttings of *Grewia tenax*: A Potential Alleviator of Iron-Deficiency Anaemia in the Sudan

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Abstract

The small-leaved white cross-berry (*Grewia tenax* (FORSK.) FIORI.) is a deciduous, tropical shrub or tree prized for its fruit. Being high in iron content, the fruit is considered as a simple safeguard against iron-deficiency anaemia. In spite of this, the fruit is exploited from the wild and there have been little or no focused efforts to domesticate and cultivate this species.

G. tenax is traditionally grown from seeds and information on the vegetative propagation is currently unavailable. The main disadvantage of seedlings is the genetic variability within the crop, which may result in variations in plant height, yield and fruit characteristics. On the other hand, vegetative propagation plays a key role in tree domestication and improvement programs as a means of a large-scale multiplication of superior genotypes. The retention of desirable characteristics, the creation of a uniform rootstock, and the ability to mass-produce identical plants quickly and efficiently are all advantages of asexual propagation.

A series of nursery experiments were conducted to assess the effects of auxin source [Indole Acetic Acid (IAA), indole-3-butyric acid (IBA) and α -naphthaleneacetic acid (NAA)], concentration (0, 1000, 1500 and 2000 ppm), duration of exposure (quick dip, one-minute dip and five-minutes dip) and form (liquid versus powder) on adventitious root formation in stem cuttings. Significant stimulation of rooting was observed with IBA at all concentrations and with IAA at 1000 and 1500 ppm. NAA at all concentrations was ineffective in promoting root formation. Maximum rooting success with IBA was achieved at 1500 ppm (43%) and with IAA at 1000 ppm (37%). Short-term exposure (as a quick dip or as a one-minute dip) of the cut surface to 1500 ppm IBA solution resulted in greater rooting success (57%-61%) than a five-minutes dip (32%). IBA in talcum powder worked slightly better than in liquid form (56% versus 52%).

Keywords: Auxins, *Grewia tenax*, rooting percentage, vegetative propagation